

Listing of Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Claim 1.(currently amended) A ~~uniformly flexible~~ coronary stent comprising:

- a. a first loop containing section having loops, said first loop containing section arranged generally in a circumferential direction, the loops in said first loop containing section occurring at a first frequency;
- b. a second loop containing section having loops, said second loop containing section arranged generally in the circumferential direction, the loops in said second loop containing section also occurring at said first frequency;
- c. at least one of said first and second loop containing sections formed of a single, continuous, generally sinusoidal pattern; and
- d. a third loop containing section, said third loop containing section arranged generally in the circumferential direction, the loops in said third loop containing section occurring at a second frequency that is higher than said first frequency, said third loop containing section disposed in the generally circumferential space between each of said first and second loop containing sections to form ~~[[a]]~~ consecutive repeating pattern patterns along the longitudinal axis of the stent for at least two repetitions and alternately joined to said first and second loop containing sections, said first, second and third loop containing sections forming a plurality uniform pattern of flexible cells;
- e. the loops in said first, second and third loop containing sections

being disposed and adapted to cooperate so that, components of said third loop containing section contribute to the cell's elongating or shortening when the stent is flexed; and

f. the loops of the first, second, and third loop containing sections further include struts having a thickness in the radial direction and width in the circumferential direction, wherein the struts of the first and second loop containing sections are wider than the width of the struts of the third loop containing section.

Claim 2.(cancelled)

Claim 3.(original) A stent according to claim [[2]] 1, wherein said stent is coated with a medicine and said compensation results in a more even dose being applied to the inside wall of the a lumen.

Claims 4-5 (cancelled)

Claim 6. (currently amended) A ~~uniformly flexible~~ coronary stent comprising:

- a. a plurality of first circumferential bands, each containing a single, continuous, generally sinusoidal pattern of loops at a first frequency;
- b. a plurality of second circumferential bands, each containing a single, continuous, generally sinusoidal pattern of loops at a second frequency higher than said first frequency, alternating with said first circumferential bands and periodically coupled to said first bands to form cells, and the second frequency loops are disposed in the generally circumferential space between each band of said first circumferential

bands to form ~~[[a]]~~ consecutive repeating ~~pattern~~ patterns along the longitudinal axis of the stent for at least two repetitions;

c. patterns of loops in said bands being disposed and adapted to cooperate so that the higher frequency band components contribute more than lower frequency bands to deformation during flexing of the stent; and

d. the loops of the first, and second bands further include struts having a thickness in the radial direction and width in the circumferential direction, wherein the struts of the first bands are wider than the width of the struts of the second bands.

Claim 7. (canceled)

Claim 8.(original) A stent according to claim 6 ~~[[7]]~~, wherein said stent is coated with a medicine and said compensation results in a more even dose being applied to the ~~inside wall of [[the]]~~ a lumen.

Claims 9-10 (cancelled)

11. (currently amended) A coronary stent consisting essentially of a plurality of triangular cells comprising 3 functional loop sections, each triangular cell comprising:

a. a first loop containing section, the first loop containing section arranged generally in the circumferential direction;

b. a second loop containing section connected to the first loop containing section at a first junction end; and

c. a third loop containing section having loops connected to the first loop containing section on one end and connected to the second loop containing

section at on its other end, the first and second loop containing sections forming before expansion a first continuous sinusoidal pattern at a first frequency and the third loop containing section forming a second single sinusoidal pattern at a second frequency lower than the first frequency, said first and second sinusoidal patterns consecutively alternating for at least two repetitions along the longitudinal axis of the stent; and

the loops in one second sinusoidal pattern are 180° out of phase with loops in the adjacent second sinusoidal patterns along a longitudinal axis of the stent;

d. wherein loops in said cells are disposed and adapted to cooperate so that, ~~when the expanded stent is in a curved vessel, cells on the outside of a curve open in length, but narrow circumferentially whereas cells on the inside of a curve shorten in length but widen circumferentially~~ components of the third loop containing section contribute to the cell's elongating or shortening when the stent is flexed resulting in a substantially constant stent cell area on the inside and outside of the curve; and

e. the loops of the first, and second sinusoidal patterns further include struts having a thickness in the radial direction and width in the circumferential direction, wherein the struts of the second sinusoidal patterns are wider than the width of the struts of the first sinusoidal patterns.

Claims 12-25 (cancelled)

Claim 26.(currently amended) An expandable coronary stent consisting essentially of a ~~plurality of enclosed flexible spaces~~ uniform pattern of flexible cells, each of the ~~plurality of enclosed flexible spaces~~ cells including:

a) a first member having a first end and a second end;

- b) a second member having a first end and a second end;
- c) a third member having a first end and a second end;
- d) a fourth member having a first end and a second end; the first end of the first member communicating with the first end of the second member, the second end of the second member communicating with the second end of the third member, and the first end of the third member communicating with the first end of the fourth member;
- e) the first member and the second member with the curved portion at their ends forming a first loop;
- f) the third member and the fourth member with the curved portion at their ends forming a second loop;
- g) a fifth member having a first end and a second end;
- h) a sixth member having a first end and a second end;
- i) a seventh member having a first end and a second end;
- j) an eighth member having a first end and a second end;
- k) a ninth member having a first end and a second end; and
- l) a tenth member having a first end and a second end, the first end of the fifth member communicating with the second end of the first member, the second end of the fifth member communicating with the second end of the sixth member, the first end of the sixth member communicating with the first end of the seventh member, the second end of the seventh member communicating with the second end of the eighth member, the first end of the eighth member communicating with the first end of the ninth member, the second end of the ninth member communicating with the second end of

the tenth member, and the first end of the tenth member communicating with the second end of the fourth member;

m) the fifth member and the sixth member with the curved portion at their ends forming a third loop;

n) the seventh member and the eighth member with the curved portion at their ends forming a fourth loop; and

o) the ninth member and the tenth member with the curved portion at their ends forming a fifth loop, the third, fourth, and fifth loops disposed in the generally circumferential space between each of the first and second loops to form a pattern that repeats at least two consecutive repetitions along the longitudinal axis of the stent, and the first, second, third, fourth, fifth, sixth, seventh, eighth, ninth, and tenth members form one of a uniform pattern of flexible cells; and

~~when the expanded stent is in a curved lumen, cells on the outside of a curve at communication points of the first and fifth and fourth and tenth members increase in length and at each of the first through fifth loops, the adjoining members come closer to each other, to cause the cell to narrow circumferentially to compensate for the increase in length, whereas cells on the inside of a curve at communication points of the first and fifth and fourth and tenth members decrease in length and at each of the first through fifth loops, the adjoining members move apart, to cause the cell to become wider circumferentially and compensate for the decrease in length; and~~

p. the first, second, third and fourth members having a thickness in the radial direction and width in the circumferential direction, wherein the first, second, third and

fourth members are wider than the width of the fifth, sixth, seventh, eighth, ninth and tenth members.

Claim 27.(cancelled)

Claim 28.(original) A stent according to claim 27, wherein said stent is coated with a medicine and said compensation results in a more even dose being applied to the inside wall of [[the]] a lumen.

Claims 29-30.(cancelled)

Claim 31(withdrawn) A multicellular stent comprising: a plurality of bands of square cells, each square cell including a first loop disposed generally longitudinally opposite a second loop, and first pair of flexible compensating members joined to the legs of the first and second loops; a plurality of bands of triangular cells, each triangular cell comprising a first loop containing section arranged generally in the circumferential direction, a second loop containing section connected to the first loop containing section, and a third loop containing section connected to the first loop containing section and the second loop containing section, and wherein loops in both square and triangular cells are disposed and adapted to cooperate so that, when the expanded stent is in a curved vessel, cells on the outside of the curve open in length, but narrow circumferentially whereas cells on the inside of the curve shorten in length but widen circumferentially.

Claim 32(withdrawn) A multicellular stent according to claim 31 wherein each band of cells at the ends of the stent are formed of square cells.

Claim 33 (withdrawn). A multicellular stent according to claim 31 wherein: each cell in the plurality of bands of triangular cells includes a third loop disposed generally longitudinally opposite a fourth loop and a second pair of flexible members joined to the cell sections containing the third and fourth loops to form a cell, the bands of second cells interspersed with the bands of first cells, and the first loop and the second loop are substantially aligned along a longitudinal axis of the stent, and wherein the third loop and the fourth loop are offset along the longitudinal axis.

Claim 34 (withdrawn). A multicellular stent according to claim 31 wherein the bands of triangular cells are interspersed with the bands of square cells to form the stent.

Claim 35 (withdrawn). A stent according to claim 31 wherein compensation, which occurs when cells on the outside of the curve open in length, but narrow circumferentially and cells on the inside of the curve shorten in length but widen circumferentially, results in a more constant density of stent element area between the inside and the outside of the curve than if the cells on the outside only lengthened and cells on the inside only shortened.

Claim 36 (withdrawn). A stent according to claim 35, wherein said stent is coated with a medicine and said compensation results in a more even dose being applied to the

inside wall of the lumen.

Claim 37 (withdrawn). A stent according to any of claims 31, wherein compensation, which occurs when cells on the outside of the curve open in length, but narrow circumferentially and cells on the inside of the curve shorten in length but widen circumferentially, results in a more constant stent cell area between the inside and the outside of the curve than if the cells on the outside only lengthened and cells on the inside only shortened.

Claim 38 (withdrawn). A stent according to claim 37, wherein said stent is coated with a medicine and said compensation results in a more even dose being applied to the inside wall of the lumen.

Claim 39 (withdrawn). A stent according to any claim 38 wherein said more even dose avoids the possibility that a toxic dose is supplied at one area while a less than effective dose is applied to another area.

Claim 40 (withdrawn). A stent according to claim 31, wherein said stent is a self expanding stent.

Claim 41 (withdrawn). A stent according claim 31, wherein said stent is a balloon expanded stent.

Claim 42 (previously presented) A stent according to claim 1, wherein the loops in the first loop containing sections are all in phase.

Claim 43 (previously presented). A stent according to claim 1, wherein, upon expansion, the cells on the outside of a curved section of the stent become narrower as the cells elongate, and cells inside of a curve become wider as the cells shorten.

Claim 44 (previously presented) A stent according to claim 6, wherein, upon expansion, the cells on the outside of a curved section of the stent become narrower as the cells elongate, and cells inside of a curve become wider as the cells shorten.

Claim 45. (previously added) The stent according to claim 1, wherein said first loop containing section is formed of a single continuous, generally sinusoidal pattern.

Claim 46. (previously added) The stent according to claim 1, wherein said second loop containing section is formed of a single continuous, generally sinusoidal pattern.

Claim 47. (previously added) The stent according to claim 1, wherein each of said first loop containing sections and second loop containing sections are formed of a single continuous, generally sinusoidal pattern.

Claim 48. (cancelled)

Claim 49. (currently amended) A ~~uniformly flexible~~ coronary stent comprising:

- a. a first loop containing section, said first loop containing section arranged generally in a circumferential direction, the loops in said first loop containing section occurring at a first frequency;
- b. a second loop containing section, said second loop containing section arranged generally in the circumferential direction, the loops in said second loop containing section also occurring at said first frequency, said second loop containing section being 180° out of phase with said first loop containing section along the longitudinal axis of the stent;
- c. at least one of said first and second loop containing sections formed of a single, continuous, generally sinusoidal pattern; and
- d. a third loop containing section, said third loop containing section arranged generally in the circumferential direction, the loops in said third loop containing section occurring at a second frequency that is higher than said first frequency, disposed in the generally circumferential space between each of said first and second loop containing sections to form ~~[[a]]~~ consecutively repeating ~~pattern~~ patterns along the longitudinal axis of the stent for at least two repetitions and alternately joined to said first and second loop containing sections, said first, second and third loop containing sections forming a ~~plurality of cells~~ uniform pattern of flexible cells; and
- e. the loops of the first, second, and third loop containing sections further include struts having a thickness in the radial direction and width in the

circumferential direction, wherein the struts of the first and second loop containing sections are wider than the struts of the third loop containing section.

Claims 50-51. (cancelled)